MODIS Technical Team Meeting
Thursday, June 19, 2003
GSFC Building 33, Room E125

Vince Salomonson chaired the meeting. In attendance were Barbara Conboy, Steve Kempler, Ed Masuoka, Chris Justice, and Jack Xiong, Bob Barnes, Bruce Guenther, and Skip Reber, with Yolanda Harvey taking the minutes.

1.0 Upcoming Events

- MODLand Workshop, July 15-16, Baltimore-Washington International Airport (BWI) Marriott.
- IGARSS 2003, July 21-25, 2003, Toulouse, France (abstracts deadline past). http://www.igarss03.com/
- 10th International Symposium on Remote Sensing by The International Society for Optical Engineering (SPIE). September 8-12, 2003, Barcelona, Spain (abstracts deadline past). http://www.spie.org/info/rs
- MODIS Science Team Meeting, September 30 – October 2, 2003, location not yet set.

2.0 Meeting Minutes

2.1 General Discussion

Salomonson reminded the meeting attendees to send in suggestions for the approved ESB maintenance contract to Shaida Johnston (sjohnston@pop400.gsfc.nasa.gov).

Conboy reported that NASA Headquarters is approving the software awards.

Salomonson reported that Gene Feldman sent out an email saying the SeaWiFS web browser is doing new things, including processing MODIS data directly from L1A using SEADAS software, though they are not duplicates the science quality of MODIS oceans products. He, however, wondered how close they are in quality to the MODIS products, and Bob Barnes replied that they should be closest to Chlor-a2, which is the MODIS analog of SeaWiFS chlorophyll. The browser is set up so that one can pick a day and time and then pull out Terra MODIS, Aqua MODIS, and SeaWiFS data, which may make access easier and, perhaps, increase use by the ocean color community. He thought that the SeaWiFS people will be working on NPP VIIRS Ocean data processing, and that MODIS is its heritage instrument. As a result, SeaWiFS is testing its capability to process NPP VIIRS ocean color data. Guenther added that in the NPOESS world, the idea is that a climate product (called a Climate Data Record, or CDR) follows an L2-equivalent product called an Environmental Data Record (EDR). The matching of these SeaWiFS products with the EOS full processing will simulate the NPP/NPOESS operational world where EDR computed operationally precede the comprehensive CDR. Also, there is a community that has developed with SeaWiFS, so it would be nice if they could keep that community together after SeaWiFS is shut off in December. Salomonson further advocated that there be continued close coordination between any of the efforts of Gene Feldman, et al. regarding the production of MODIS products and the maintenance and evolution of the MODIS oceans products by the MODIS Oceans Discipline group. All should work together to minimize any related confusion in the oceans community.

2.2 Instruments Status

Xiong reported that all systems (other than the SD, discussed below) are working well. Calibration activities are normal, and are proceeding as planned.

2.2.1 Terra MODIS

Xiong reported that the Solar Diffuser screen on Terra will be discussed at an SDS anomaly review on Wednesday, June 25, 2003. He will attend, as well as the Flight Ops team, people from Santa Barbara, and other MODIS team members. He will talk about calibration concerns (lost 6 weeks already). It will be at this meeting that they will try to decide when to open the door; everyone will get to make a recommendation and then a decision will be made afterwards. Xiong said that the lesson they've learned throughout this issue is about the impact on Aqua (this issue is similar to the command-drop event that left the door open in about a week).

He reported that they might increase the Terra SRCA radiometric calibration frequency because they have a spare lamp; he will suggest this to Santa Barbara. The purpose of this is to improve the RSB radiometric trending.

2.2.2 Aqua MODIS

No report made.

2.3 DAAC

Kempler reported that the DAAC experienced a data corruption problem over the weekend that was related to AMASS. Apparently, AMASS was not "factory tested" with the advertised ability to be used with 2 TB of cache. This condition was the cause of data corruptions between May 28 and June 12, 2003. Because the corruptions were random, it took this length of time until a corrupted datum was discovered. In addition, because of the issues surrounding the need to process and reprocess as fast as possible, the risk was known and had been agreed upon by all to run without checksums. Thus, checksums were turned off, which kept the problem from being found earlier. Masuoka said that what happened with the checksums was that there was a lot of discussion on checksums (how to do them, where, and at what cost) at the ESDIS Project level, so he didn't think that it was necessarily a DAAC problem. Kempler said that as soon as the cause of the problem was discovered (this was fortunately very quick), the cache limit was brought back down to a safe volume, and processing has since continued corruption-free. Kempler also said that they're running the checksums now, and doing some benchmarking to find out how benchmarking affects throughput. Fifteen days shouldn't have a major impact (over the next month, they will backfill the data slowly); they are checking with users who had ordered the data and are trying to cover all the bases. Guenther asked if the growth in product volume is related to quality checks, and Salomonson said that he thought so. Guenther said that the community seems to be saying that we need to be as careful with the data quality as possible (including metadata, etc.), so in light of that he wonders why checksums were turned off. Kempler said that all parties were trying to get the system running as fast as they could, and that they knew the risks from the first. Masuoka said that on the checksums, if you look at where they were computed within the systems, it would be possible to see that when data are moved across the network via ftp, they are checksummed at both ends. The place that they're dangerous not to be checksummed at is in the cache in front of the

archive, because they could potentially corrupt the files or PDR server. The DAAC will be doing checksums on ingest, archive, distribution to MODAPS, and ingest from MODAPS once MODAPS has checksumming implemented. Ultimately we would like them to do checksums in HDF (4 and 5, because of the NCSA).

2.4 MODAPS

Salomonson asked Masuoka about an upcoming meeting with Martha Maiden on June 20, 2003. Masuoka said that the meeting has to do with NPP Level 1 requirements, and that he will send Salomonson an email about the meeting. Salomonson said that he still needs to talk to her about the ESIS meeting at which he will be speaking on the "MODAPS Lessons Learned." Salomonson said that he needs a diagram of what the original design of the EOSDIS system looked like compared to the design with the SIPS. Masuoka said that he would try to locate a figure for Salomonson's Presentation.

Justice said that the last time he spoke with Maiden, she was concerned about the growth of MODIS' data volume. Masuoka said that there are two parts to the problem. First, there is the time that a reprocessing collection is held in the archive before it is deleted. Second, there has been an increase in MODIS product volumes since the 2/96 baseline was established. With regard to the first item, Masuoka has let ESDIS Project and NASA Headquarters know that the MODIS team does not need to retain products beyond the 6 month rolling window once a new Collection is in the DAAC [Note: at a subsequent PIP meeting Gary Alcott explained that the way products are stored in the DAAC archives precluded deleting the previous collection with a rolling window so it is unlikely that any savings can be achieved without some re-engineering of the tape volume groups in the archive]. With regard to the growth of product volume, the Land and Ocean disciplines will need to examine how best to reduce their product volumes in the archives to something approximating the 2/96 baseline volumes since the funding received from the SWGD did not cover volume increase beyond 2004. The complicating factors if no new funds are found to increase archive volumes are the potential requirement to store more years of MODIS data (up to 8 years per instrument instead of 5 years) and architecture of volume groups and Collection numbering that prevents a rolling window approach to product deletion.

Masuoka reported that Coronado has put PGEs 09 and 10 up on his site, and they are now waiting on other things to go in. Those two PGEs were a test case, and they can now do the others quickly, so everything should be up quite soon.

Masuoka reported that the NSIDC sent volumes to Dan Marinelli; our target was 40 gigabytes per day per instrument, and the analysis (done by Robert Wolfe) showed that we will only use 25 gigabytes per day per instrument with every product we plan to make in the future. The total cost is $3,000,000 under CSOC to provide the 40-gigabyte per day network to NSIDC; however, based on emails Masuoka received from Jeff Smith, using Abilene could reduce the costs to $500K per year. Masuoka noted that MODIS is willing to do its part by clarifying the product volumes that we intend to see in the future. Masuoka also said that we have to get back to Marinelli on the ratio of MODIS browse to MODIS products. MODIS won't do a browse file for every product, and Marinelli needs to know how many browse files we plan to send per day to work out the impact on the DAAC ingest rates from the extra browse.

Masuoka said that he got a note from MaryAnne Esfandiari asking for suggestions on improving projects like ESDIS, EOSDIS, etc. He said that he will send her an email suggesting that Salomonson is interested. He added that everything that she has does has been positive.

2.5 Land

Justice reported that his group is getting ready for the MODLand meeting, and that there are a lot of proposals to review in the meantime. The MODLand meeting will be held at the BWI Marriott. He noted that he has put Salomonson on the agenda. Xiong asked Justice for a final copy of the agenda, Justice said that he would send it once it's finished. He also noted that Vermote will be giving a presentation on calibration, and Xiong said that he will check with Vermote on the Solar Diffuser issue.

2.6 Cryosphere

Salomonson reported for Hall, saying that she mentioned that as browse images get instituted for Snow and Ice products, then data volumes should drop. Kempler said that that's the idea. He said that he hasn't seen a drop in L1 yet, but the metric is in granules, not in out-and-out volume. Salomonson asked if Sara Grave's subsetter works, and Kempler said that he thought that it is part of the data pool.

3.0 Action Items

3.1 New Action Items

None.

3.2 Old Action Items

3.2.1 King and Kempler to work together on getting ESDTs for the new Atmospheres L2 data product.
Status: Closed.

3.2.2 Kempler to coordinate with Oceans group on creating documentation for the DAAC on the new Oceans L1A data subsets.
Status: Open.

3.2.3 Tech Team to further discuss TRW using MODIS data for validation of the NPP/NPOESS production process.
Status: Open.

3.2.4 PIP to develop list of items to go into work plan for the new contract (EMD).
Status: Open.

3.2.5 Ed Masuoka to invite a NOAA delegate to the weekly MODIS Tech Team meetings or the PIP meetings.
Status: Open. Masuoka sent the invitation to Gene Legg and Bruce Ramsay.

3.2.6 Wolfe to work with Hucek on the different approaches to aggregating the Aqua MODIS focal planes for geolocation purposes.
Status: Open.

3.2.7 Xiong to email an explanation of MODIS' once-per-month roll maneuver (as it affects rvs) to Salomonson and Tom Pagano.
Status: Open.